



APRIL 28, 2010

HEALTH ADVISORY

Potential for Dengue Infection Among Relief Workers Returning from Haiti

*The following information was adapted from an official CDC Health Advisory

Summary: The Centers for Disease Control and Prevention (CDC) has received reports of dengue fever among relief workers returning from Haiti, where the disease is endemic. Health-care providers in the United States should consider dengue in the differential diagnosis of febrile illness in any person who has recently been in Haiti or other countries where dengue is being transmitted, and are encouraged to submit samples to state health departments. In U.S. areas with *Aedes* mosquitoes present, infected travelers also may present a risk for local spread of dengue virus(es).

Background

The 7.0 magnitude earthquake that struck just outside Port-au-Prince, Haiti, on Jan. 12, 2010, caused extensive damage to homes and utilities and left many residents without proper shelter or access to important services such as electricity and water. Exposure to the elements and increased opportunities for mosquito breeding site proliferation has likely increased the risk of contact with vectors that may spread diseases such as dengue. Since dengue is endemic in Haiti and relief workers responding to previous disasters in Haiti reported high rates of dengue infection, the CDC Dengue Branch advises that physicians evaluate travelers returning with a febrile illness (or a recent history of febrile illness) from Haiti and report cases of suspected dengue to their state health department.

Symptoms of Dengue Fever

Dengue fever (DF) is characterized by high fever plus two or more of the following: headache, retroorbital pain, joint pain, muscle or bone pain, rash, mild hemorrhagic manifestations (e.g., nose or gum bleed, petechiae, or easy bruising), and leukopenia. The incubation period for DF ranges from three to 14 days, but is typically about one week; therefore, illness may occur while the workers are stationed in Haiti or after they return to the U.S. Most dengue fever cases are self-limited and can be treated with bed rest, acetaminophen and oral fluids.

A small proportion of patients develop dengue hemorrhagic fever (DHF), which is characterized by presence of resolving fever or a recent history of fever lasting two to seven days, any hemorrhagic manifestation, thrombocytopenia (platelet count $<100,000/\text{mm}^3$), and abnormal vascular permeability evidenced by hemoconcentration, hypoalbuminemia, or abdominal or pleural effusions. Dengue hemorrhagic fever can result in circulatory instability or shock, and the risk for these complications may be increased in people with prior dengue infection. Adequate management of DHF patients generally requires timely hospitalization and judicious administration of intravascular fluids and close monitoring of vital signs and hemodynamic status.

Recommendations

Physicians seeing a patient who has illness consistent with dengue, as described above, and who has recently traveled to Haiti should seriously consider laboratory testing. Initiation of supportive care should not be delayed pending results of laboratory testing. Instead, laboratory results should be used to inform primary prevention efforts within the patient's household and community.

Physicians should collect specimens from patients who have symptoms consistent with dengue infection and who have traveled to Haiti within the past 30 days and submit these specimens to the North Dakota Department of Health, Division of Laboratory Services – Microbiology. For questions about sample submission, contact the Division of Laboratory Services at 701.328.6272.

Whenever possible, physicians should submit paired acute and convalescent samples (2 cc. (ml) of centrifuged serum) to facilitate optimal diagnostic testing.

Type of sample	Interval since onset of symptoms	Type of Analysis
Acute	until day 5	RT-PCR for dengue virus
Convalescent	6 to 30 days	ELISA for dengue IgM

Samples should be sent to:

North Dakota Department of Health
Division of Laboratory Services – Microbiology
2635 E. Main Avenue
Bismarck, N.D. 58506

As of 2010, dengue virus infections, including dengue fever (DF) and dengue hemorrhagic fever (DHF), were added to the list of nationally notifiable conditions. Improved dengue surveillance, consistent with international public health reporting obligations under the revised International Health Regulations (IHR, 2005), will help detect and report dengue cases when they occur.

Many parts of the U.S. have competent vectors for dengue viruses; therefore, infected travelers also may present a risk for potential local spread of dengue. Three states (Florida, Texas and Hawaii) have had local outbreaks identified in the last decade.

For more information, contact the North Dakota Department of Health, Division of Disease Control, at 800.472.2180 or 701.328.2378. Additional information about dengue is available at <http://www.cdc.gov/dengue/>.

Categories of Health Alert messages:

- Health Alert conveys the highest level of importance; warrants immediate action or attention.
- Health Advisory provides important information for a specific incident or situation; may not require immediate action.
- Health Update provides updated information regarding an incident or situation; no immediate action necessary.
- Health Information provides general information that is not necessarily considered to be of an emergent nature.

This message is being sent to local public health units, clinics, hospitals, physicians, tribal health, North Dakota Nurses Association, North Dakota Long Term Care Association, North Dakota Healthcare Association, North Dakota Medical Association, and hospital public information officers.